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## BOOK REVIEW

# STEREOCHEMISTRY OF ORGANOMETALLIC AND INORGANIC COMPOUNDS: VOLUME 2

I. BERNAL (ed)

*Amsterdam: Elsevier 1987 pp 246 + × US \$95.00, Dfl 195.00*  
*ISBN 0 444 42815 1 (Vol. 2), 0 444 42604 3 (Series)*

This is the second volume in the series, concerning inorganic stereochemistry. A marked change is evident with respect to the first volume in that the current one concentrates on one area, that of the coordination chemistry of macrocycles. The volume comprises three chapters of varying scope and coverage. In the first (J.C.A. Boeyens and S.M. Dobson) stereochemical aspects of metallic macrocyclic complexes are reviewed, although crown ethers are excluded. The opening sections deal with a stereochemical classification of macrocyclic systems. It is densely written, and best approached with a set of molecular models placed within easy reach, but provides a systematic and comprehensive framework for the appropriate nomenclature. Once grasped, the set of rules proposed is elegant, logical, and above all, useful. It should be added that the remainder of the chapter, which deals with the stereochemistry of various classes of macrocycles (principally tetradentate), rests heavily on the system of nomenclature outlined. The coverage here is very good and adequate reference is made to other reviews. A feature of the first volume is preserved in this chapter. That is that the authors build on their review by pointing to the future and some of the questions in the field that remain unanswered. Such provision lends a sharper focus than other approaches perhaps, and researchers in the field will find the chapter of great use for their own endeavours.

The second chapter (H.-J. Buschmann) presents quite a different aspect of macrocyclic chemistry and deals with the relationships between thermodynamic stability and stereochemistry. This chapter is confined to crown ethers and cryptands, and for obvious reasons concerns itself primarily with alkali metal and alkaline earth complexes. Within the limits set by the authors, the coverage is exhaustive, but is set out in a lively and readable way. Excellent sections deal with the various influences on thermodynamic stability which are important, and with more elaborate ligands which contain donors other than oxygen. A fine historic perspective is evident and the list of references is comprehensive without being overwhelming. Again the areas of deficiency in the field are highlighted and this is one of the review's valuable assets.

The final chapter (K.E. Matthes and D. Parker) concerns transition metal complexes, but confines itself to complexes which have the metal centres in unusual oxidation states or to those species which enforce unusual coordination geometries on the usual valencies. This is perhaps the weakest section of the volume as the usual excellent overview provided by earlier contributions to the series is somewhat submerged by the classical descriptive approach which has been adopted. The

authors confine themselves principally to crystallographic characterization of complexes, although this is set out in a thorough and systematic way.

By way of more general considerations, I found the production of the second volume to be of somewhat higher quality than the first and the index to be far more useful. Every chemical library will wish to purchase a copy of the volume, and if the general standard is maintained, the series promises to become a standard reference work. The formidable price however remains, although individual researchers will find relevant volumes a welcome addition to their own libraries.

P. A. Williams.